

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 1-15 are requested to be cancelled.

New claims 32-38 have been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 16-38 are now pending in this application. Claims 16-29 have been withdrawn from consideration.

Information Disclosure Statement

As noted in the reply of March 24, 2010, initials were omitted next to reference A4 in the Office's copy of the PTO/SB/08 form submitted with the Information Disclosure Statement of December 8, 2005. This was not addressed in the present Office Action. Applicant respectfully requests that the Office provide a signed and fully initialed copy of this PTO/SB/08 form with the next Office correspondence.

Rejections under 35 U.S.C. § 103

Claims 1-9 and 11-15 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 2001/0031391 to Hironaka *et al.* (hereafter "Hironaka") in view of U.S. Patent No. 2004/0115522 to Urso *et al.* (hereafter "Urso"). Claim 10 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hironaka and Urso in view of U.S. Pub. No. 2004/0253520 to Wensley *et al.* Claims 1-15 have been cancelled. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 30 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. 2003/0165744 to Schubert *et al.* (hereafter “Schubert”) in view of U.S. Patent No. 5,865,860 to Delnick (hereafter “Delnick”). This rejection is respectfully traversed.

Schubert teaches an electrode comprising a collector with printed electrode. See Schubert at paragraphs 0038 and 0062. However, as indicated on page 5 of the Office Action, Schubert does not disclose or suggest an electrode comprising, among other things, an electrode layer comprising a plurality of dots containing an active material, each of the dots being connected to adjacent dots by connecting portions, as recited in claim 30.

Delnick teaches a process for providing an electrode and applying electrolyte to the electrode using an ink-jet printing process. See the abstract of Delnick. Delnick uses the ink-jet printing process to distribute the electrolyte throughout the pore structure of the separator and the electrode by providing a porous structure 204 that includes a first layer 206 as an electrode layer and a second layer 208 as a separator layer. See Delnick at col. 3, lines 37-51; col. 4, lines 50-61; col. 5, lines 20-35; and Figure 2. Delnick states that the electrolyte can be deposited over an upper surface 207 of the separator 208, such as by ink-jet printing, to fill the separator 208 and the electrode layer 206 with electrolyte solution 216 because the electrolyte percolates down through the pores of the porous structure 204. See Delnick at col. 6, lines 5-24. Applicant notes that the transport of the electrolyte in the porous structure may be significantly reduced or inhibited if the surface tension of liquid electrolyte is not significantly lower than the surface energy of the porous media.

The Office argues on page 5 of the Office Action that although Schubert fails to teach that the electrode layer comprises a plurality of connected dots, the skilled artisan could have applied the known technique of Delnick to print the electrode of Schubert and the results would have been predictable. Applicant respectfully disagrees.

Delnick does not disclose or suggest an electrode comprising, among other things, an electrode layer comprising a plurality of dots containing an active material, each of the dots being connected to adjacent dots by connecting portions, as recited in claim 30.

Instead, Delnick teaches deposition and ink jet printing of the electrolyte solution 216, not the active material of an electrode layer. In other words, the process of Delnick does not produce an electrode layer comprising a plurality of dots containing an active material, each of the dots being connected to adjacent dots by connecting portions, as recited in claim 30. In fact, Delnick states that the material of the electrode 206 layer and the separator 208 are preferably provided by screen or stencil printing processes, not ink jet processes. See Delnick at col. 5, lines 58-60.

Delnick does not provide a suggestion or guidance to one of ordinary skill in the art to provide an electrode layer comprising a plurality of dots containing an active material, each of the dots being connected to adjacent dots by connecting portions, as recited in claim 30, such as by ink printing the active material of the electrode layer, as argued by the Office, because Delnick does not disclose or suggest ink jet printing or otherwise providing the active material of an electrode layer with the structure recited in claim 30. One of ordinary skill in the art would have understood that the active material of an electrode layer is different from an electrolyte solution.

As a result, Delnick does not demonstrate that it was known in the art at the time of Applicant's invention to ink jet print the active material of an electrode or to otherwise provide the active material of an electrode with the structure recited in claim 30. Nor would such a result have been predictable, as argued by the Office, in light of the deficiencies of Schubert and Delnick.

On the other hand, Applicant's invention yields an advantageous, unpredictable result by providing a microstructure with high durability against the vibration, because a dot acts as a mass and a connecting portion acts as a spring such that the microstructure has an action similar to a "mass-spring model." See Applicant's specification at col. 8, line 15, to col. 9, line 2.

For at least the reasons discussed above, the combination of Schubert and Delnick does not render claims 30 to be unpatentable because the combination of Schubert and

Delnick does not disclose or suggest all of the features of claim 30. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 31 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schubert and Delnick in view of Urso. This rejection is respectfully traversed.

As claim 31 is similar to claim 30, the combination of Schubert in Delnick does not render claim 31 to be unpatentable for at least the reasons discussed above in regard to independent claim 30.

Urso teaches a battery electrode that has active material in a uniform thickness on the current collector. See Urso at paragraph 0002.

However, Urso fails to remedy the deficiencies of Schubert and Delnick. Therefore, the combination of Schubert, Delnick, and Urso does not render claim 31 to be unpatentable. Reconsideration and withdrawal of this rejection is respectfully requested.

New Claims

New claims 32-38 have been added. Claims 32-38 depend from claim 30 or 31 and are allowable over the prior art for at least the reasons discussed above and for their respective additional recitations.

Conclusion

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or

even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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